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Forest sector dependence in rural British Columbia 1971 - 1981

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Abstract

Data from 1971 and 1981 Censuses of Population are analyzed to determine the degree of forest sector dependence of rural British Columbia's incorporated communities (ICC) and territorial subdivisions (TSD). Thirty-six of 112 ICCs, 15 of 55 TSDs and 88 unincorporated communities were found to be forest sector specialized in 1981. The rural forest sector labour force grew between 1971 and 1981 with most of the growth occurring in the ICCs. Areas of possible future research are outlined.

Résumé

Les données des recensements de 1971 et 1981 sont analysés pour déterminer le niveau de dépendance sur le secteur forestier des localités constituées (ICC) et les subdivisions territoriales (TSD). On a trouvé qu en Colombie Britannique rurale trente-six des 112 ICC, 15 des 55 TSD et 88 localités non constituées étaient specialisées en secteur forestier en 1981. Le marché du travail du secteur forestier rural a agrandi entre les années 1971 et 1981. La plupart de cette augmentation se trouve dans les ICCs. Les possibilités de recherches dans l'avenir sont discutées.

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Introduction

The forest sector[1] is by far the most important in the Province of British Columbia. Forest based manufacturing consistently accounts for about half of the total manufacturing shipments in the province, and close to 60% of total provincial exports. Approximately 100 000 persons, or about one in ten British Columbia workers, are directly employed in the forest sector, and about twice this number are indirectly dependent on the forest sector for their livelihood in service industries such as transportation, capital repair and construction, material and supply. (Environment Canada, 1983) In non-metropolitan areas outside the Lower Mainland and the southern part of Vancouver Island, the forest sector is particularly important. Here, there are many communities and regions which are dependent on the forest resource as their major or only economic base. The economic well-being of these areas is highly sensitive to trends and cycles in the forest industry, as well as local timber supply problems. For these reasons, the location of the sector's labor force is of great interest to federal and provincial policy-makers. In times of economic downturn, foreknowledge of forest dependent communities and regions can aid policy makers in directing programs to where they are most needed. Therefore, the first section of the report categorizes all incorporated communities (ICCs), territorial subdivisions (TSDs) and unincorporated communities (UICs) with a population greater than fifty by degree of forest sector dependence based on forest sector labor force. This is done for 1971 and 1981.

The second section of the report contains an analysis of the differences in the 1971 and 1981 findings. This will provide information on movements of the forest sector labor force and on the relative dependence of communities and regions on the forest sector between the two years studied.

The third section discusses implications of the findings while the fourth section discusses possible areas of future research in this field. The final section offers some concluding remarks.

It is not the goal of this paper to test any particular theory or hypothesis. The goal instead is to create a data base from which hypotheses can be tested. Testing these hypotheses can be the focus of future research.

Locating the forest sector labor force

Methodology

The details of the methodology have been placed in Appendix 1. The method of analysis chosen for the study followed the four-step procedure of the Department of Regional Economic Expansion (1977, 1979) studies. Labor force data were analyzed to determine the percentage of total labor force in each component of the forest sector and in all components of the forest sector combined. An index which measured the degree of economic specialization by ICC and TSD was also used. As the data did not provide detailed information on UICs, other sources were used to determine forest sector dependence for these communities.

The methodology employed is imperfect. In choosing a methodology the constraints of time, cost and data accessibility must be weighed against the degree of precision a report provides. The stated goal of this report is to provide basic information on the pattern of forest sector dependence in the Province as a whole. To achieve the degree of generality desired on the provincial level some precision was sacrificed on the community level. For example, two communities may be ranked equally in this study with respect to forest sector dependence. They may differ significantly however with respect to timber supply conditions, level of local purchases by forest sector firms or age and condition of production facilities. Judgments regarding the vulnerability of communities and areas will require investigation which is beyond the scope of this report.

As data from only two years were available, the report cannot provide a trend analysis for the years between 1971 and 1981. Given, however, that the report employs labor force data which are less susceptible to erratic variation than em-

[1] The forest sector is defined by the following three-digit standard Industrial Classification (SIC) groups: logging (SIC 031), forestry (SIC 039), wood industries (SIC 251, 252, 254, 256, 258 and 259) and paper and allied industries (SIC 271-274).

ployment data (since the former includes the unemployed[2]) and that both 1971 and 1981 followed relatively strong years in the forest sector, the differences between the two years merit comparison for changes in forest sector dependence. That is, we can look at forest sector dependence in 1971 and compare it to 1981 but we do not have sufficient information to comment on the intervening years or the path that was followed to get to the new point. The analysis must be classed as comparative static rather than dynamic.

The data would not capture distortions caused by commuting or living for long periods away from one's place of residence. If someone was a resident in a community but worked in another it would be the home community which would be considered dependent on the workers forest sector employment and not the community where the worker is employed. While one would not expect these distortions to be great since the worker would probably spend much of his income in the home community, this is a factor that would be considered if a community were singled out for a detailed forest sector dependence evaluation.

The qualifications cited here are not meant to diminish the importance of the findings of the report but rather to outline the bounds of the study. It is meant as an initial sorting of communities by degree of forest dependence. This having been accomplished, future work could break these into finer divisions as required.

Results

The results are categorized by degree of forest sector dependence. The five categories and their definitions are outlined below[3]:

- Forest Specialized — as defined in the methodology in Appendix I.
- Dual — the forest sector and one other sector dominate the economic base.
- Diversified — at least three sectors dominate the economic base and the forest sector is one of these.
- Specialized Non-Forest — this characterizes communities which according to the modified Herfindahl index[4] were specialized in a sector other than the forest sector, but for which the forest sector was still one of the top five in total stated occupations.
- Minor or No Forest Sector — No forest sector component in the top five stated occupations.

These categories cannot be characterized as 'good' or 'bad'. Though we often hear of communities/regions striving for diversification, diversification is not necesssarily desirable. For instance the Diversified category includes ICCs and TSDs which have three equally weak leading categories as well as those which have three strong leading categories. The latter is really the goal of efforts to diversify a community or region.

The ICCs and TSDs are listed by category for 1971 and 1981 in Appendix 2 and are summarized in the tables below.

Tables 1 and 2 show a similar distribution of ICCs and TSDs between the various categories in 1971 and 1981. (This of course says nothing about the movement of workers.) The dominance of the forest sector in rural British Columbia is clearly displayed as 46% of all ICCs and 60% of TSDs depend on the forest sector as at least a dual partner in forming the economic base in the community or territory, while two-thirds of the ICCs and 85% of the TSDs have the forest sector as at least a partner in a diversified economy. The breadth of the forest sector in B.C. is attested to by the fact that in both study years only one ICC[5] and zero TSDs had no forest sector labor force.

The number of forest sector dependent UICs

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[2] A community with a closed mill and 500 unemployed mill workers is still considered dependent on the forest sector. The community may be suffering but that does not alter the fact that it relies on the forest sector.

[3] It should be emphasized that this hierarchy focuses on the forest sector alone. The Minor or No Forest Sector category is treated as a residual. ICCs and TSDs classified here may be Dual, Diversified or Specialized Non Forest economies in their own right. However no attempt has been made to categorize this group.

[4] This is defined in Appendix 1.

[5] Keremeos in 1971 and Silverton in 1981.

Table 1. Incorporated Communities by Degree of Forest Sector Dependence 1971, 1981

Degree of Dependence	1971	% of Total	1981	% of Total
Forest-Specialized	34	30.6	36	32.1
Dual	15	13.5	16	14.3
Diversified	23	20.7	21	18.8
Specialized Non-Forest	10	9.0	6	5.4
Minor or No Forest Sector	29	26.1	33	29.5
Totals	111	99.9	112	100.1

Note: The difference in total number of communities for the two years can be explained by differences in the sample. Guisachan, Valleyview, Kinnarid, Dufferin and South Fort George are included only in 1971 while Logan Lake, Granisle, Elkford, New Hazelton, Whistler and Port Clements appear only in 1981.

with populations greater than 50 also remained nearly static over the study period. In 1971 there were 93 such communities while in 1981 there were 88. Combining ICCs and UICs we see that 127 communities were forest sector specialized in 1971. In 1981 this figure was 124.

Movements in the forest sector labor force

Tables 1 and 2 leave many questions unanswered. There was little change in the numbers of ICCs and TSDs in each category but this could be explained by balancing movements between categories or by very little movement altogether. Since the units are not homogenous in terms of population, the tables mask the number of people dependent on the forest sector. The reasons for any movements towards or away from forest dependence are also unexplained. This section addresses these and other points of interest.

Labor force changes

Tables 3 and 4 report changes in the forest sector labor force. Specifically, they contain the number of people employed in the ICCs and TSDs whose stated occupation on the census form fell within the study's definition of the forest sector.

Table 2. Territorial Subdivisions by Degree of Forest Sector Dependence 1971, 1981

Degree of Dependence	1971	%	1981	%
Forest-Specialized	16	29.1	15	27.3
Dual	17	30.9	18	32.7
Diversified	15	27.3	14	25.5
Specialized Non-Forest	3	5.5	2	3.6
Minor Forest Sector	4	7.3	6	10.9
Totals	55	100.1	55	100

The forest sector labor force in rural British Columbia increased substantially over the period studied (Tables 3 and 4). This growth has been

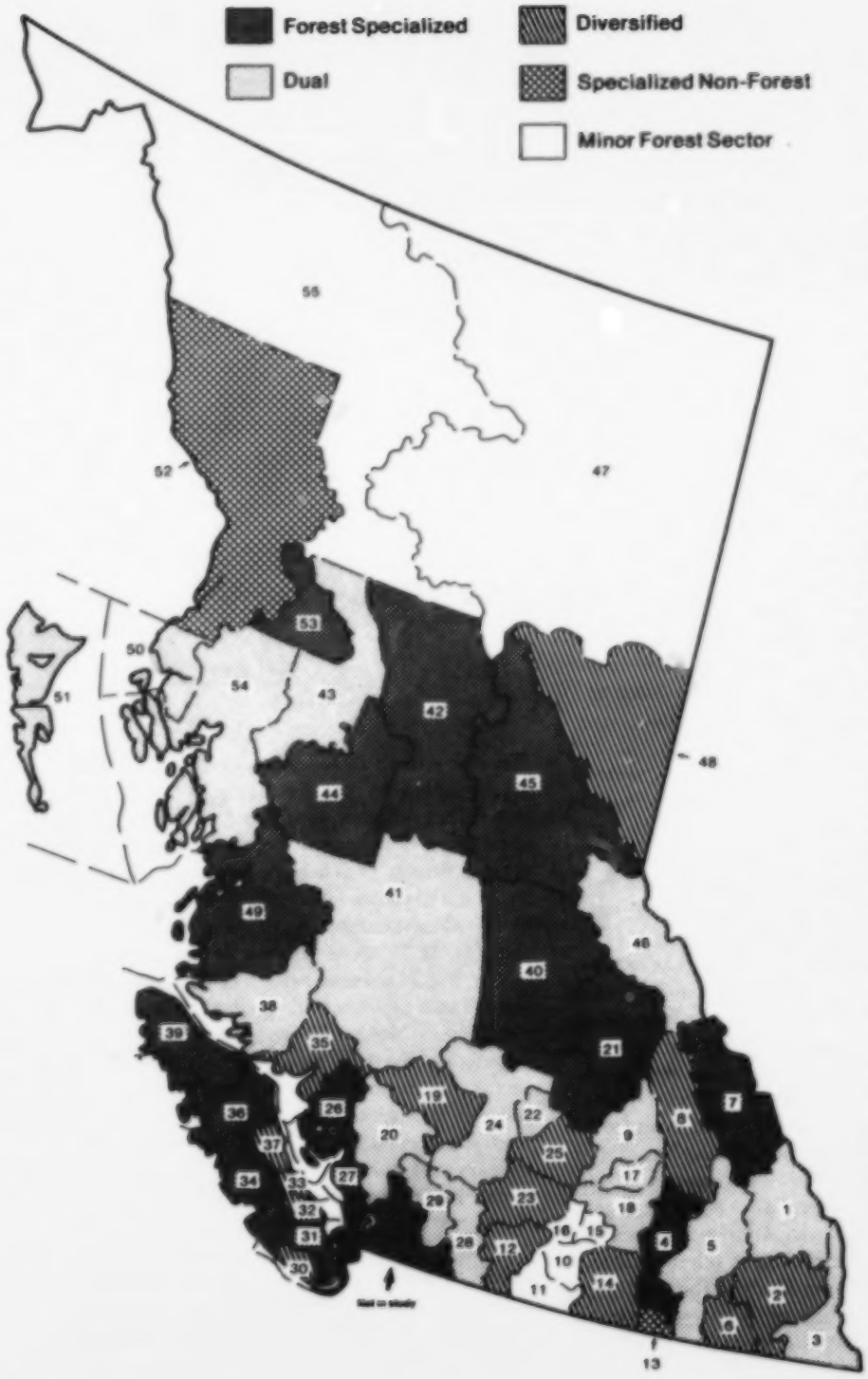
Table 3. Changes in Forest Sector Labor Force 1971-1981 (ICCs)

	1971	% of Total	1981	% of Total	Growth (Decline) 1971-1981
Forest-Specialized	20 985	64.6	27 560	55.2	31.3
Dual	3 865	11.9	10 025	20.1	159.4
Diversified	4 035	12.4	7 640	15.3	89.3
Specialized Non-Forest	1 135	3.5	460	0.9	(59.5)
Minor or No Forest Sector	2 485	7.6	4 240	8.5	70.6
Totals	32 505	100	49 925	100	53.6

Table 4. Changes in Forest Sector Labor Force 1971, 1981 (TSDs)

	1971	% of Total	1981	% of Total	Growth (Decline) 1971-1981
Forest-Specialized	16 555	59.7	17 795	54.3	7.5
Dual	4 915	17.7	8 070	24.6	64.2
Diversified	5 195	18.7	5 525	16.9	6.4
Specialized Non-Forest	445	1.6	190	0.6	(57.3)
Minor Forest Sector	630	2.3	1 170	3.6	85.7
Totals	27 740	100	32 750	100	18.1

Map 1. Forest sector specialized ICC — 1981



1. East Kootenay A
2. East Kootenay B
3. East Kootenay C
4. Central Kootenay A
5. Central Kootenay B
6. Central Kootenay C
7. Columbia Shuswap A
8. Columbia Shuswap B
9. Columbia Shuswap C
10. Okanagan-Similkameen A
11. Okanagan-Similkameen B
12. Okanagan-Similkameen C
13. Kootenay-Boundary A
14. Kootenay-Boundary B
15. Central Okanagan A
16. Central Okanagan B
17. North Okanagan A
18. North Okanagan B
19. Squamish-Lillooet A
20. Squamish-Lillooet B
21. Thompson-Nicola A
22. Thompson-Nicola B
23. Thompson-Nicola C
24. Thompson-Nicola D
25. Thompson-Nicola E
26. Powell River A
27. Sunshine Coast A
28. Fraser-Cheam A
29. Fraser-Cheam B
30. Capital C
31. Cowichan Valley A
32. Nanaimo A
33. Nanaimo B
34. Alberni-Clayoquot A
35. Comox-Strathcona A
36. Comox-Strathcona B
37. Comox-Strathcona C
38. Mt. Waddington A
39. Mt. Waddington B
40. Cariboo A
41. Cariboo B
42. Bulkley-Nechako A
43. Bulkley-Nechako B
44. Bulkley-Nechako C
45. Fraser-Ft. George A
46. Fraser-Ft. George B
47. Peace River-Liard A
48. Peace River-Liard B
49. Central Coast A
50. Skeena-Quilcheno A
51. Skeena-Quilcheno B
52. Kitimat-Stikine A
53. Kitimat-Stikine B
54. Kitimat-Stikine C
55. Stikine A

Map 2. TSD by degree of forest sector dependence — 1981

Table 5. Rural Forest Sector Labor Force versus Total Forest Industry Labor Force 1971-1981

	Total Forest Sector Labor Force	TSDs	% of Total	ICCs	% of Total	TSD + ICC	% of Total
1971	118 125	27 740	23.5	32 505	27.5	60 245	51.0
1981	117 895	32 750	27.8	49 925	42.3	82 675	70.1

centered in Forest-Specialized and Dual ICCs and TSDs (78%), and has been particularly evident in the ICCs. The strength of this growth is apparent when we consider that the total forest sector labor force in B.C. declined slightly between 1971 and 1981. This implies that the growth in the forest sector has been outside the Lower Mainland and Capital regions. The increasing importance of the rural forest sector employment is brought out in Table 5, showing the growth in the rural forest sector labor force as a percentage of total forest sector labor force.

The forest sector labor force in ICCs increased markedly between 1971 and 1981 (Table 5). This pattern carries over to total labor force in rural British Columbia (Table 6). Again the largest increase occurred in the ICCs. The total labor force grew much faster than the forest sector labor force although the forest sector remained the leader of the economy. One theory that can explain this is the employment multiplier. Increased jobs in the basic sector (e.g., a sawmill or mine) increase demand for locally produced services and make some new service ventures viable. The increase in the total rural labor force is too great to be completely explained by increases in forest employment and the accompanying multiplier effect alone but this was almost certainly an important contributing factor. Other possible factors include the increased participation rate of women in the economy and the growth of other basic and service industries. Further study in the multiplier impacts of various types of base employment should be of interest to policy-makers.[6]

[6] The figure of 2.5 is often used as the forest industry multiplier but no recent studies have been undertaken to confirm this figure.

Table 6. Changes in Total Rural Labor Force 1971 – 1981

	1971	1981	% Increase
TSDs	128 760	183 065	42.2
ICCs	202 445	369 445	82.5
Total	331 205	552 510	66.8

Has the growth in forest sector labor force been accompanied by comparable growth in population? This will tell us if more of the province's population is becoming dependent on the forest sector. British Columbia's population increased by 25.6% between 1971 and 1981. The population in the ICCs is increasing at more than twice that rate (Table 7) while the population in the TSDs is growing at a lesser rate than the total population (Table 8). When the groups are combined it can be seen that a slightly greater percentage of population lived in areas where a strong forest sector was present in 1981. Areas which were specialized in a sector other than the forest sector were the biggest losers in terms of population. It appears that either the existing forest sector declined in these centers (causing them to fall to the Minor or No Forest Sector category) the specialized sector became weaker (causing the population to drop) or another sector entered the economy causing a move to one of the other categories. Insight into where this population may have gone is found in following sections which discuss movements between categories.

The labor force is growing much faster than population in ICCs and TSDs (Tables 6, 7 and

Table 7. ICC Population Totals as a Percentage of B.C. Population[1]

	1971 Population	% of B.C. Population (1971)	1981 Population	% of B.C. Population (1981)	% Increase (decrease) in Population
Forest-Specialized	164 355	7.5	206 340	7.5	25.5
Dual	50 385	2.3	131 251	4.8	160.5
Diversified	95 955	4.4	150 888	5.5	57.2
Specialized Non-Forest	23 895	1.1	12 924	0.5	(45.9)
Subtotal	334 590	15.3	501 403	18.3	49.9
Minor Forest Sector	159 455	7.3	246 968	9.0	54.9
Total	494 045	22.6	748 371	27.3	51.5

[1] 1971 B.C. population 2 184 621
1981 B.C. population 2 744 467

Table 8. TSD Population Totals as a Percentage of B.C. Population[1]

	1971 Population	% of B.C. Population (1971)	1981 Population	% of B.C. Population (1981)	% Increase (decrease) in Population
Forest-Specialized	137 916	6.3	137 117	5.0	(0.6)
Dual	63 666	2.9	89 821	3.3	41.1
Diversified	79 742	3.7	89 747	3.3	12.5
Specialized Non-Forest	20 130	0.9	5 223	0.2	(74.1)
Subtotal	301 454	13.8	321 908	11.7	6.8
Minor Forest Sector	33 332	1.5	48 857	1.8	46.6
Total	334 786	15.3	370 765	13.5	10.7

[1] 1971 B.C. population 2 184 621
1981 B.C. population 2 744 467

Table 9. Magnitude of ICC Transitions from 1971-1981

Degree of change[1]	Number of ICCs where forest sector became more important	% of total ICCs	Number of ICCs where forest sector became less important	% of total ICCs
Minor change $0< \times <2$	10	9.0	12	10.8
Moderate change $2\leq \times <4$	4	3.6	1	0.9
Extreme Change $4\leq \times$	0	0	0	0
Totals	14	12.6	13	11.7

[1] Degree of change is represented by $\times$, where $\times$ is a one step movement away or towards forest sector dependence.

8). This provides a clue about the nature of the incoming rural workers. If families were relocating the populations would be increasing quickly as well. As they are not, it can be speculated that these workers are single men or young married couples with both parties in the labor force. Given the limited opportunities for women to work in small communities, particularly in resource based communities, the former is more likely. This could be confirmed by further research.

Movements of ICCs and TSDs between categories

Although the number of ICCs and TSDs has remained almost static by category in the two years studied, employment and population have experienced significant movement by category. Has this been caused by movements between categories, changes within ICCs or TSDs which stayed in the same category, or a combination of the two?

There has been considerable movement between categories although most of it has been minor (Tables 9 and 10). Indeed, just more than one-third of the TSDs and about one-quarter of the ICCs moved to another category, and about one-fifth of the UIC Forest-Specialized communities (not shown on tables) ceased their dependence but were replaced by an equal number of new ones.

Since these tables simply show that there has been movement between categories, we are still left with the question of why these movements occurred. We know only that in terms of numbers by categories they balanced each other. Movements in and out of dependence categories are described in Tables 11 and 12.

The category experiencing the greatest movement in the ICCs was the Dual category while the Dual and the Diversified categories had the greatest number of transitions in the TSD group. Given the large changes witnessed earlier in the Dual category this is not surprising. The primary reason for ICCs and TSDs entering or leaving the Dual category can be traced to growth in their economies[7]. Of the 18 movements involving dual ICCs, 15 involved only growth while only one revealed decline in base employment. Eight of the 14 TSD transitions were growth-centered.

[7] This information was obtained by closer investigation of the data and can not be read from information included in this report.

Table 10. Magnitude of TSD Transitions from 1971-1981

Degree of change[1]	Number of TSDs where forest component became more important	% of Total TSDs	Number of TSDs where forest component became less important	% of Total # of TSDs
Minor change $0< \times <2$	6	10.9	8	14.5
Moderate change $2\leq \times <4$	2	3.6	3	5.5
Extreme Change $4\leq \times$	0	0	0	0
Totals	8	14.5	11	20.0

[1] Degree of change is represented by ×, where × is a one step movement away or towards forest component dependence.

Growth in sectors other than the forest sector caused most of the transitions between categories in both groups. The trend toward greater forest sector growth in the ICCs than in the TSDs noted earlier is confirmed on these tables. Forest sector growth contributed to nearly one half of the ICC transitions but only about one quarter of the TSD category movements.

A closer look at movements from the Forest-Specialized ICCs and the Specialized Non-Forest category provides some interesting insights. The ICCs that left the Forest-Specialized category did so in all but one case because a new sector was added to the economic base. Most of these went into the Dual sector. As well, most of these were fairly large communities which accounts for some of the growth in population and labor force in the dual category. It also implies significant growth in the ICCs that remained Forest-Specialized since population and labor force grew in this category despite the loss of some large population centers. The movement from the Specialized Non-Forest category was largely to the Minor or No Forest Sector category. The main reason for the move to this category was not a loss of the forest sector from the community but rather the growth of other sectors of the economy relative to the forest sector. When these findings are combined with the fact that TSD forest sector growth has lagged behind growth in the ICCs it can be hypothesized that the forest sector grew steadily where it was already strong and established and grew slowly where operations were smaller or where other industries were dominant. The reason for this could be that the economies of larger operations which are close to services outweigh the benefits of small operations close to the resource. A check of B.C. Ministry of Forests Mill Lists (1973, 1980) confirms that there has been a shift to larger mills. Alternatively, perhaps the sharp decline in logging employment over the period studied caused by changes in harvest technology had its greatest impact in the TSDs which include the forest area. Further study would be required to confirm or refute these hypotheses.

Summary of labor force location and movements

Before discussing possible implications of these results let us summarize the findings of the previous sections:

- The number of ICCs and TSDs in each category remained about the same in 1971 and 1981.

Table 11. Dominant Reasons for Movement of ICC's Between Categories[1]

	Type of Labor Force						
	Forest +	Forest and Other +	Forest −	Forest + Other −	Other(s) +	Other(s) −	Total
Left Forest-Specialized	−	−	−	−	5	−	5
Became Forest-Specialized	3	−	−	2	−	−	5
Left Dual	3	−	−	2	3	−	8
Became Dual	2	2	−	−	5	1	10
Left Diversified	−	1	−	−	2	1	4
Became Diversified	1	−	−	1	2	−	4
Left Specialized Non-Forest	2	−	1	1	3	−	7
Became Specialized Non-Forest	1	−	−	−	2	−	3
Left Minor or No Forest Sector	2	1	−	−	−	−	3
Became Minor or No Forest Sector	−	−	1	−	4	−	5
Totals[2]/2	7	2	1	3	13	1	27/54

[1] + = increase
− = decrease

[2] The totals are divided by two since each ICC which changed category will be recorded twice in each column, once as leaving a category and once as entering another category.

Table 12. Dominant Reasons for Movement of TSDs Between Categories[1]

	Type of Labor Force								
	Forest +	Forest and Other +	Forest −	Forest and Other −	Forest + Other −	Forest − Other +	Other(s) +	Other(s) −	Total
Left Forest-Specialized	−	−	2	−	−	−	2	−	4
Became Forest-Specialized	2	−	−	−	1	−	−	−	3
Left Dual	1	−	−	−	−	1	4	−	6
Became Dual	−	2	1	1	−	−	2	1	7
Left Diversified	1	2	−	1	1	−	1	1	7
Became Diversified	−	−	1	−	−	1	4	−	6
Left Specialized Non-Forest	−	−	−	−	−	−	2	−	2
Became Specialized Non-Forest	−	−	−	−	−	−	1	−	1
Left Minor Forest Sector	−	−	−	−	−	−	−	−	0
Became Minor Forest Sector	−	−	−	−	−	−	2	−	2
Totals[2]/2	2	2	2	1	1	1	9	1	19/38

[1] + = increase
− = decrease

[2] The totals are divided by two since each ICC which changed category will be recorded twice in each column, once as leaving a category and once as entering another category.

- The labor force in the forest industry in rural B.C. increased substantially in 1981 over 1971. The growth was most notable in ICCs.

- The rural forest sector labor force grew much more rapidly than total forest sector employment.

- Population in ICCs with a strong forest sector component grew at more than twice the rate of the total B.C. population over the period studied. Population in TSDs with a forest component grew at a rate less than the provincial pace.

- There has been substantial movement between categories. The primary reason for movement in the ICCs and TSDs has been growth of the forest sector and/or other sectors with forest sector growth being a more important cause in the ICCs than in the TSDs.

- The forest sector is apparently becoming centered in the larger rural communities. It is still an important component of the economic base of the TSDs but it and other industries are not growing as rapidly in these areas. Growth was greater where the industry was firmly established.

Implications

Importance of the forest sector

The forest sector was shown to be of greater importance to B.C.'s rural economy in 1981 than 1971. Just as the forest sector has strengthened the Province's economy, it can also lead the decline if it should weaken and not be replaced by another sector. Similar multiplier effects to those which have accompanied the growth in the industry would also accompany its decline. While figures such as employment per cubic metre of allowable cut could be calculated to begin measuring the impact of neglecting the forest resource, it will suffice here to say that a large decline of the forest industry would have a devastating employment impact on rural B.C. Even local declines would hit some communities hard. On the other hand, an effort to sustain the existing forest sector through forest management activities, would be a base for economic growth in rural British Columbia assuming continuing demand for forest products.

Employment programs

While this report will not attempt to argue the merits of government employment programs, some discussion is warranted by the findings of the study. A recent example of such a program would be the Employment Bridging Assistance Program (EBAP). A forest sector which is becoming centered in rural ICCs would make delivery of these programs easier than it was 10 to 15 years ago. But in as much as one of the goals of these programs is to keep the labor force in place to resume their employment when demand for forest products picks up, they should be less necessary if this trend continues. The larger communities which now house the industry will be more able to retain a work force than a smaller, more isolated community.

Wages and labor supply

If the industry is becoming centered in ICCs as has been hypothesized, then neoclassical economic theory would have some predictions to make about the supply of labor and wages paid. The effects would vary in different industries.

- Sawmills. If a factor in determining wages is the degree of isolation then it would be expected that firms would offer lower relative wages to these workers. A greater supply of workers at each and every wage would also be expected and would put downward pressure on wages. This pressure could be offset if working in larger mills has been shown to be more hazardous than working in smaller mills.

- Logging. If the mills are becoming more centrally located then this implies that logs are being hauled a greater distance. Logging camps would be more isolated. A relative increase in logging wages and decline in labor supplied at each and every wage would be expected.

- Pulp and Paper. As this industry has always been centered in the ICCs there is no reason

to predict shifts similar to those predicted for the other sectors.

Diversification

Diversification is a word which is often heard from all levels of government. As noted earlier, an economy strong in one sector and weak in many is better off than an economy which is weak in all sectors although the latter may be classified as diversified. Clearly when this word is used it is meant in the context of many strong sectors making up the economic base. Is the B.C. rural economy moving in this direction? The labor force data used in this paper does not indicate a move to a strong diversified rural economy. The economy has grown stronger but the strength appears to be centered in the Forest-Specialized and Dual communities. There are exceptions such as Kamloops, parts of the Thompson-Nicola census division, and others, where three sectors are strong but for the most part ICCs and TSDs rely on one and sometimes two main sectors with the forest sector often being one of them. The implications of this are that if governments (at all levels) wish to diversify regions or communities there is much work still to be done. The next questions are, can it be done, and should it be done? Given the resource dependence of the rural economy, diversification appears unlikely. Tourism is an area which could be explored — and has seen some success; e.g. Mt. Washington near Courtenay, but this is a difficult market to enter and stay competitive. Some advantages of tourism are that it brings in dollars from outside the area and employs many people (although the wages are relatively low). In sum, the rural economy is strengthening but the move to diversification is slow and possibly without much probability of success.

Topics for further research

This section will concentrate on outlining further areas of study where these results could be used if combined with other data. The paper mentioned some areas for further research. More research in the following areas would be valuable.

- Wages by Category: Do different categories pay different wages? It would also be useful to know how wages influence the employment multiplier. Those arguing for the benefits of a strong forest sector would like to show that as a high wage paying industry, it creates more secondary employment than other industries.

- Unemployment: It can be hypothesized that a strong diversified economy would be less likely to suffer in times of recession, while the forest industry has historically been susceptible to demand cycles. How have the various categories performed in recent years?

- Migration, Turnover and Nature of Labor Force: The forest sector has grown. But where did the new workers come from? Also, have workers remained in the same community, or has there been high turnover? Are some categories more conducive to holding on to a steady workforce? Has the apparent move to less isolated areas reduced turnover rates? A related question concerns the nature of the workers. Do some categories tend to hold more family units rather than single workers?

- Ownership: What has been the performance of foreign-owned versus domestic foreign companies? Has one shown a greater tendency towards growth? Are local purchasing levels significantly different?

- Industry Movements: It was hypothesized that the forest industry is moving into areas where services are already present. Can more rigorous testing support this hypothesis?

- Employment Multiplier: How do employment multipliers vary by category?

Conclusion

The forest industry is the leader of B.C.'s economy and is of particular importance to the rural economy. This report has isolated areas and communities of the province most dependent on the forest sector, and identified changes in the movement of the forest sector labor force between degrees of forest dependence. It was determined that the rural labor force grew rapidly particularly in the ICCs. Growth of the forest sector and other sectors of the economy caused much move-

ment between dependence categories. The forest sector is apparently becoming centered in large rural communities. The report is a first step in helping policy-makers at all levels of government direct their policies so as to derive the greatest possible benefit from this vital sector of the economy.

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Appendix 1

Methodology

The years 1971 and 1981 were chosen for analysis. These two years are the only recent years where detailed occupational data were collected by Statistics Canada through the Census of Population. Two data bases were obtained for use: the 1972 (data for 1971 was unavailable) and 1981 Census of Manufacturing and the 1971 and 1981 Labor Force by Detailed Industry for Municipalities in B.C. These data were obtained through custom computer runs from Statistics Canada in Ottawa. Both data bases are divided according to the standard geographic census code system of Statistics Canada into census subdivisions which consist of ICCs[1], census agglomerations, and TSDs. The TSDs cover geographic areas which contain a number of unincorporated settlements. The Census of Manufacturing lists all manufacturing and primary production activities by census subdivision along with the Standard Industrial Classification (SIC) code for each firm and its employment size range. The Labor Force by Detailed Industry lists every SIC with its accompanying labor force figure for each census subdivision. For both data bases, three categories of census subdivision were excluded:

- Census metropolitan areas (CMA) (Greater Vancouver Regional District and Capital Regional District except for Subdivision C) due to the diverse nature of their economic base.

- Communities within commuting distance of a CMA as work and services are readily accessible outside the confines of the community's boundaries. This eliminated areas surrounding Greater Vancouver including the Central Valley Regional District and the Dewdney-Alouette Regional District.

- Indian reserves.

Throughout the analysis, communities with a population of less than 50 were excluded, as it is assumed that they are incapable of being self-sufficient and therefore must be dependent on another community. The forest sector labor force resident in these towns and villages is captured in the TSD data.

The approach used follows an economic base concept modified to pertain only to the forest sector rather than measuring the entire economic base. To determine if a community is forest sector specialized, one calculates the percentage of the resident labor force attributable to the forest sector. If it constitutes a significant proportion, the community relies on the forest sector for its livelihood. The precise method of analysis chosen follows the four step procedure of the Department of Regional Economic Expansion (1977, 1979) study. It was chosen as it is the only recent comprehensive single-sector study done in a Canadian setting. Also, it utilizes both low-cost, accessible data, and straightforward techniques.

The 1971 and 1981 censuses were analyzed to determine the percentage of a census subdivision's labor force employed in the forest sector by individual components and aggregated (Steps 1 and 2), and the subdivision's degree of specialization in forestry (Step 3). The 1971 and 1981 Censuses of Manufacturing were to be used to determine if forest products processing facilities dominated the manufacturing component of a census subdivision (Step 4). This final step was not found to be useful in indicating forest sector dependent communities and was not used in the study. To study individual communities within TSDs (for which no detailed census data were available) government and commercial information was examined. With these sources, it was possible to compile a list of forest sector specialized communities and areas in B.C and rank ICCs and TSDs by degree of forest sector dependence.

The labor force data was analyzed to determine the percentage of the labor force for each census subdivision that consisted of employees in the four related SIC forest sector groups. A community was considered to be forest sector dependent if the percentage of the labor force in a single SIC three digit category devoted to the

[1] Incorporated communities are communities that have been granted power by the Province in the form of a charter. They have a local governing body under the jurisdiction of the Municipality Act.

forest sector was greater than 30 percent or if the total forest sector labor force in an ICC or TSD was above the level in the following table, according to the population of that census subdivision.

Table A1. Forest specialization threshold values of labor force percentage by population range

Population Range	Forest Sector Labor Force Percentage
1 – 2499	60
2500 – 4999	40
5000 – 9999	30
10000 – 29999	25
30000+	20

The lower percentages required for a community to be dependent as the population range increases is due to the greater nonbasic sector that a larger community generates. This results from a minimum economic size for many economic activities. Therefore, as a subdivision grows, more services and goods are locally produced, resulting in more employment in nonbasic activities.

The labor force data was also used to determine the degree of economic specialization of the census subdivision. A modification of the Herfindahl Index[2] was computed. The Herfindahl index is used in industrial organization economics to determine the level of firm concentration in an industry and is considered mathematically superior to other methods. The modified formula, (Department of Regional Economic Expansion 1977), is:

$$S_i = \sqrt{\sum_{j=1}^{n} \left[\frac{E_{ij}}{E_i} \right]^2}$$

where E_i = total employment in division i
and E_{ij} = total employment in division i in activity j
where j = 1,..., n

This modified equation is used in international trade as described by Michaely (1962) for measuring a country's concentration of exports and imports. The major shortcoming of the equation is that all SICs are treated as equally different from one another. Thus, the 12 three digit forest sector SICs, although closely related, are not considered to be one group. Therefore, the specialization index measures the concentration in one industry rather than the overall forest sector. This factor was considered during analysis of the data. A subdivision on the border of the specialization cutoff (see below) was reevaluated if the forest component was split between say, logging and sawmillling. This was done rather than lumping all activities into larger groups from the beginning as individual forest sector activities were of interest.

As the specialization ratio S_i is less than or equal to one, the following range of cutoffs was used, again taking into account the larger nonbasic sector generated by more populated subdivisions.

Table A2. Forest specialization threshold values of the specialization index by population range

Population Range	Specialization Index Value (cut-off value)
51-499	0.3
500-29 999	0.2
30 000+	0.15

The labor force in the census subdivision was examined to learn what sector was causing the specialization index to exceed the critical value or what sectors were important in the economy. A shortcoming of this technique was that ICCs or TSDs with two or more dominant sectors sometimes exceeded the threshold values when they greatly exceeded all other sectors. The top five

[2] The Herfindahl Index is defined by Scherer (1980) as:

$$H = \sum_{i=1}^{n} S^2$$

where S_i is the market share of the i^{th} firm in a market of n firms.

stated occupations for each ICC and TSD were studied to find these errors and properly categorize the communities by degree of forest dependence.

The lists that were compiled from the preceding analysis were cross tabulated to identify all ICCs and TSDs by degree of forest dependence (see Appendix 2). As TSDs contain a number of smaller communities, other sources were consulted to determine the communities within each TSD where the activities were actually located. These sources included the 1971 and 1981 Directory of the Forest Products Industry by Miller Freeman Publications (1971, 1981); the Journal of Commerce Ltd. (1970, 1978) Greenbook for 1970 (1971 was unavailable) and 1978/79 (last year of publication); Progress Publishing (1970, 1980) "ABC" Directory for 1970 (1971 was unavailable) and 1980/81; Madison Canadian Lumber Reporter Ltd. (1982) Directory 1982/83 (1981 was unavailable); Dominion Directory's (1981) Directory for 1981/82; British Columbia Ministry of Economic Development's (1978) Regional Index; regional profiles for the British Columbia Ministry of Industry and Small Business Development (1970; 1979; 1980 a, b; 1981 a, b, c, d, e; 1982 a, b, c, d, e, f; 1983 a, b, c, d); British Columbia Ministry of Forests' (1978 a, b; 1979 a, b, c; 1980; 1981; 1982); and Canada, Statistics Canada's (1975, 1982) mill lists for 1973 (first year published) and 1980 (1981 was unavailable). Where conflicts were found in the information, personal telephone contact was made with either the pertinent Regional Economic Development Commission office or the company itself.

The criteria of the percentage of the labor force employed in the forestry sector, as described previously, was used. As labor force figures were not available for these smaller communities, the average labor force population ratio for all ICCs was used to form estimates. This figure of .4 is confirmed by Andrews (1960) and Weimer and Hoyt (1960) who state that the figure is usually between 40 and 50%.

The final list was then compiled of all forest sector dependent communities in B.C. with a population of 50 and over for the years 1971 and 1981 (Appendix 2).

Appendix 2

Table A3. Forest-Specialized ICCs and TSDs and Leading Activities — 1971

a) Thirty percent of labor force in a single forest sector SIC industry group[1]

Community	Leading Activity	TSD	Leading Activity
Gold River	P	Mt. Waddington A	L
Houston	W	Mt. Waddington B	L
Midway	W		
Port Alice	P		
Powell River	P		
Sayward	L		
Slocan	W		
Tahsis	W		
Zebellos	L		

b) Forest sector labor force percentage exceeding threshold value

Community	Leading Activity	TSD	Leading Activity
Campbell River	P	Alberni-Clayoquot A	W
Ladysmith	L	Cariboo A	W
North Cowichan	W	Central Kootenay A	W
Port Alberni	W	Comox-Strathcona B	L
Quesnel	W	Cowichan Valley A	W
Squamish	P	Fraser-Fort George A	W
		Ocean Falls A[2]	P
		Thompson-Nicola A	W

c) Specialization index exceeding threshold value

Community	Leading Activity	TSD	Leading Activity
Castlegar	W	Capital C	L
Chase	L	Columbia-Shuswap A	W
Chetwynd	W	Fraser-Fort George B	W
Clinton	W	Kitimat-Stikine B	L
Duncan	P	Nanaimo A	P
Gibson's	P	Sunshine Coast A	L
Golden	W		
Kaslo	W		
Lumby	W		
Lake Cowichan	W		
Mackenzie	W		
Nakusp	L		
Nanaimo	P		
Pemberton	L		
Port McNeil	L		
Prince George	W,P		
Telkwa	L		
Terrace	L		
Valemount	W		

[1] P = Paper and Allied; W = Wood; L = Logging
[2] Became Central Coast A in 1981 census

Table A4. Dual ICCs and TSDs with other leading sector 1971

Community	Other Activity	TSD	Other Activity
Burn's Lake	Services	Buckley-Nechako C	Agriculture
Courtenay	Defence	Cariboo B	Agriculture
Cumberland	Defence	Central Kootenay C	Mining
Fernie	Mining	Columbia-Shuswap C	Agriculture
Fort St. James	Mining	Comox-Strathcona A	Fishing
Grand Forks	Mining	East Kootenay A	Tourism
Greenwood	Mining	Fraser-Cheam B	Defence
Kinnaird	Mining	Kitimat-Stikine A	Mining
Merritt	Mining	Kitimat-Stikine C	Smelting
100 Mile House	Services	North Okanagan A	Agriculture
Parksville	Tourism	North Okanagan B	Agriculture
Prince Rupert	Fishing	Peace River-Liard B	Agriculture
Tofino	Fishing	Skeena-Q.C. A	Fishing
Ucluelet	Fishing	Skeena-Q.C. B	Mining
Vanderhoof	Services	Squamish-Lillooet B	Mining
		Thompson-Nicola D	Agriculture
		Thompson-Nicola E	Agriculture

Table A5. Diversified ICCs and TSDs with other leading sectors — 1971

Armstrong	Agriculture
	Services
Coldstream	Agriculture
	Glass
Cranbrook	Rail Transport
	Construction
Creston	Services
	Agriculture
Dufferin	Construction
	Truck Transport
Enderby	Services
	Rail Transport
Hope	Tourism
	Mining
Invermere	Schools
	Tourism
Kamloops	Services
	Rail Transport
Kent	Agriculture
	Lodging
Lillooet	Rail Transport
	Services
Nelson	Services
	Rail Transport
New Denver	Gov't. Services
	Mining
Port Hardy	Mining
	Gov't. Services
Princeton	Services
	Mining
Qualicum Beach	Services
	Construction
Revelstoke	Rail Transport
	Services
Salmon Arm	Agriculture
	Services
Sechelt	Defence
	Utility
Smithers	Rail Transport
	Services
South Fort George	Construction
	Rail Transport
Taylor	Oil and Gas
	Services
Williams Lake	Services
	Rail Transport
Buckley-Nechako A	Agriculture
	Mining
Buckley-Nechako B	Agriculture
	Mining
Central Kootenay B	Mining
	Agriculture
Columbia-Shuswap B	Construction
	Rail Transport
Comox-Strathcona C	Defence
	Agriculture
East Kootenay B	Agriculture
	Mining
Fraser-Cheam A	Tourism
	Mining
Kootenay-Boundary B	Agriculture
	Mining
Nanaimo B	Agriculture
	Construction
Okanagan-Similkameen C	Agriculture
	Mining
Powell River A	Mining
	Stone quarry
Squamish-Lillooet A	Mining
	Utility
Thompson-Nicola B	Services
	Construction
Thompson-Nicola C	Agriculture
	Mining

Table A6. Specialized Non-Forest ICCs and TSDs with sector of specialization 1971

Community	Specialization	TSD	Specialization
Comox	Defence	Kootenay-Boundary A	Smelting
Fraser Lake	Mining	Okanagan-Similkameen B	Agriculture
Harrison Hot Springs	Tourism	Peace River-Liard A	Agriculture
Hazelton	Services		
Kitimat	Smelting		
Peachland	Mining		
Port Edward	Fishing		
Salmo	Mining		
Silverton	Mining		
Spallumcheen	Agriculture		

Table A7. Minor or No Forest Sector ICCs and TSDs — 1971

ICCs		TSDs
Alert Bay	McBride	Central Okanagan A
Ashcroft	Montrose	Central Okanagan B
Cache Creek	Oliver	Okanagan-Similkameen A
Chilliwack	Osoyoos	Stikine A
Dawson Creek	Penticton	
Fort Nelson	Pouce Coupé	
Fort St. John	Rossland	
Fruitvale	Sparwood	
Guisachan L.D.	Stewart	
Hudson's Hope	Summerland	
Kelowna	Trail	
Keremeos	Valleyview	
Kimberly	Vernon	
Lytton	Warfield	
Massett		

Table A8. Forest-Specialized UICs — 1971

Adam's Lake	Clearwater	Glendale	Lac La Hache	Okanagan Falls	Shelley	Woodfibre
Anzac	Cobble Hill	Gold Bridge	Lamming Mills	Ootsa Lake	Sicamous	Woss Lake
Avola	Cooper Creek	Hagensborg	Lang Bay	Oyster River	Skookumchuck	Youbou
Barriere	Cowichan Bay	Halfmoon Bay	Likely	Paldi	South Hazelton	
Bear Lake	Crofton	Harrop	Lone Butte	Parson	Sproat Lake	
Beaver Cove	Decker Lake	Heffley Creek	Louis Creek	Port Clements	Spuzzum	
Blue River	Donald	Hixon	Mahatta River	Port Mellon	Stillwater	
Boston Bar	Dunkley	Holberg	Malakwa	Port Renfrew	Summit Lake	
Brilliant	Edgewood	Honeymoon Bay	Margueritte	Queen Charlotte City	Tete Jaune	
Brisco	Elko	Horsefly	Mesachie Lake	Radium	Upper Fraser	
Canal Flats	Exeter	Justkatla	Monte Lake	Red Rock	Vavenby	
Caycuse	Fort Fraser	Jordon River	Nanoose Bay	Sandspit	Vernon Lake	
Cedarside	Franklin River	Knight Inlet	New Hazelton	Savona	Wells	
Celista	Galloway	Kokish	Nitinat	70 Mile House	Westwold	
Chemainus	Giscome	Kitwanga	Ocean Falls	Sewell Inlet	Winter Harbour	

Table A9. Forest-Specialized ICCs and TSDs and Leading Activities — 1981

a) Thirty percent of labor force in a single forest sector SIC industry group

ICC	Leading Activity	TSD	Leading Activity
Fort St. James	W	Mt. Waddington B	L
Gold River	P		
Houston	W		
Mackenzie	W		
Midway	W		
Pemberton	L		
Port Alice	P		
Port Clements	L		
Port McNeil	L		
Powell River	P		
Sayward	L		
Slocan	W		
Tahsis	W		
Zebellos	L		

b) Forest Sector labor force percentage exceeding threshold value

ICC	Leading Activity	TSD	Leading Activity
North Cowichan	W	Alberni-Clayoquot A	W
Port Alberni	W	Buckley-Nechako A	W
Quesnel	W	Cariboo A	W
		Thomson-Nicola A	W

c) Specialization index exceeding threshold value

ICC	Leading Activity	TSD	Leading Activity
Burn's Lake	W	Buckley-Nechako C	W
Campbell River	L	Central Coast A	L
Chase	L	Central Kootenay A	W
Chetwynd	W	Columbia Shuswap A	W
Clinton	W	Comox-Strathcona B	L
Gibson's	P	Cowichan Valley A	W
Golden	W	Fraser-Fort George A	W
Greenwood	W	Kitimat-Stikine B	L
Ladysmith	W	Powell River A	P
Lake Cowichan	W	Sunshine Coast A	L
Lumby	W		
Nakusp	L		
New Hazelton	L		
100 Mile House	W		
Prince George	W		
Telkwa	W		
Terrace	L		
Valemount	W		
Vanderhoof	W		

Table A10. Dual ICCs and TSDs with other leading activity — 1981

ICC	Other Activity
Castlegar	Mining
Courtenay	Defence
Duncan	Services
Fernie	Mining
Grand Forks	Services
Hazelton	Services
Hope	Tourism
Kaslo	Services
Kitimat	Smelting
McBride	Services
Merritt	Mining
Nanaimo	Services
Prince Rupert	Fishing
Princeton	Mining
Squamish	Transport
Ucluelet	Fishing

TSD	Other Activity
Buckley-Nechako B	Agriculture
Cariboo B	Agriculture
Central Kootenay B	Services
Columbia-Shuswap C	Agriculture
East Kootenay A	Services
East Kootenay C	Mining
Fraser-Cheam A	Tourism
Fraser-Cheam B	Services
Fraser-Fort George B	Agriculture
Kitimat-Stikine C	Smelting
Mt. Waddington A	Fishing
North Okanagan A	Agriculture
North Okanagan B	Agriculture
Skeena — Q.C. A	Fishing
Skeena — Q.C. B	Mining
Squamish-Lillooet B	Agriculture
Thompson-Nicola B	Agriculture
Thompson-Nicola D	Agriculture

Table A11. Diversified ICCs and TSDs with other leading sectors — 1981

ICC	Other Sectors
Armstrong	Contractors
	Agriculture
Coldstream	Agriculture
	Services
Cranbrook	Tourism
	Rail Transport
Creston	Tourism
	Agriculture
Cumberland	Construction
	Defence
Enderby	Contractors
	Services
Fort Nelson	Rail Transport
	Gas Distribution
Invermere	Services
	Tourism
Kamloops	Services
	Rail Transport
Kent	Agriculture
	Defence
Lillooet	Services
	Rail Transport
Nelson	Services
	Contractors
New Denver	Mining
	Services
Revelstoke	Rail Transport
	Construction
Salmo	Mining
	Construction
Salmon Arm	Services
	Agriculture
Sechelt	Services
	Contractors
Smithers	Rail Transport
	Services
Taylor	Services
	Contractors
Tofino	Fishing
	Tourism
Williams Lake	Mining
	Services

TSD	Other Sectors
Capital C	Contractors
	Services
Central Kootenay C	Agriculture
	Contractors
Columbia-Shuswap B	Rail Transport
	Construction
Comox-Strathcona A	Services
	Construction
Comox-Strathcona C	Defence
	Agriculture
East Kootenay B	Contractors
	Mining
Kootenay-Boundary B	Agriculture
	Contractors
Nanaimo A	Construction
	Services
Nanaimo B	Services
	Construction
Okanagan-Similkameen C	Agriculture
	Mining
Peace River-Liard B	Agriculture
	Construction
Squamish-Lillooet A	Utility
	Rail Transport
Thompson-Nicola C	Agriculture
	Mining
Thompson-Nicola E	Agriculture
	Construction

Table A12. Specialized Non-Forest ICCs and TSDs with sector of specialization

ICC	Specialization	TSD	Specialization
Fraser Lake	Mining	Kitimat-Stikine A	Mining
Fruitvale	Agriculture	Kootenay-Boundary A	Mining
Harrison Hot Springs	Tourism		
Port Edward	Fishing		
Port Hardy	Mining		
Qualicum Beach	Services		

Table A13. Minor or No Forest Sector ICCs and TSDs — 1981

ICCs			TSDs
Alert Bay	Lytton	Summerland	Central Okanagan A
Ashcroft	Massett	Trail	Central Okanagan B
Cache Creek	Montrose	Vernon	Okanagan-Similkameen B
Chilliwack	Oliver	Warfield	Peace River-Liard A
Comox	Osoyoos	Whistler	Stikine A
Dawson Creek	Parksville		
Elkford	Peachland		
Fort St. John	Penticton		
Granisle	Pouce Coupé		
Hudson's Hope	Rossland		
Kelowna	Silverton		
Keremeos	Sparwood		
Kimberly	Spallumcheen		
Logan Lake	Stewart		

Table A14. Forest-Specialized UICs — 1981

Adam's Lake	Caycuse	Donald	Hixon	Likely	Phillips Arm	Spillamacheen
Anahim Lake	Cedarside	Dunkley	Holberg	Lone Butte	Port Mellon	Sproat Lake
Avola	Celista	Edgewood	Honeymoon Bay	Mahatta River	Port Renfrew	Stillwater
Barriere	Chemainus	Elko	Horsefly	Malakwa	Q.C. City	Tete Jaune
Bear Lake	Chezacut	Fort Fraser	Isle Pierre	Merville	Radium	Tlell
Beaver Cove	Clearwater	Franklin River	Jordan River	Mesachie Lake	Rock Creek	Upper Fraser
Birch Island	Coal Harbour	Galloway	Jutskatla	Monte Lake	Saltier	Upper Mud River
Blue River	Cooper Creek	Glendale	Kitwanga	Nanoose Bay	Sandspit	Vavenby
Boston Bar	Cottonwood	Gold Bridge	Kokish	Nimpkish	Savona	Vernon Lake
Brilliant	Cowichan Bay	Hagensborg	Lac La Hache	Okanagan Falls	Sewell Inlet	Wells
Brisco	Crofton	Harrison Mills	Lamming Mills	Oyster Bay	Shelley	Westbank
Canal Flats	Decker Lake	Harrop	Lang Bay	Paldi	Sicamous	Winter Harbour
			Lardeau		South Hazelton	Woss Lake
						Youbou